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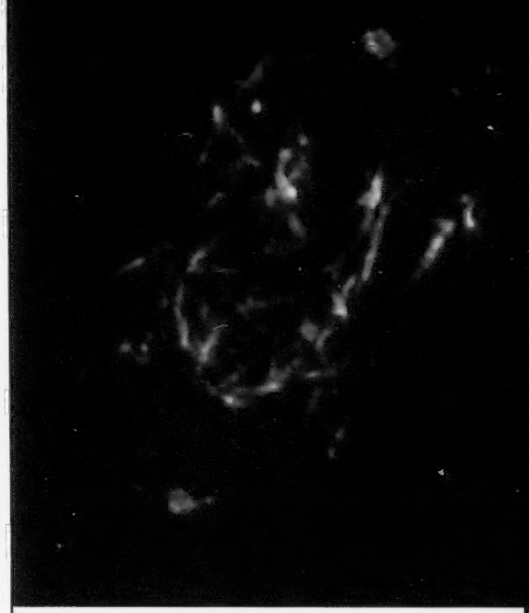

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Uehara and Goshima follow the regrowth of depolymerized microtubules (green) in anaphase cells also stained for γ-tubulin (red) and DNA (blue). The Augmin complex is required for the de novo formation of anaphase microtubules and generation of a functional central spindle.
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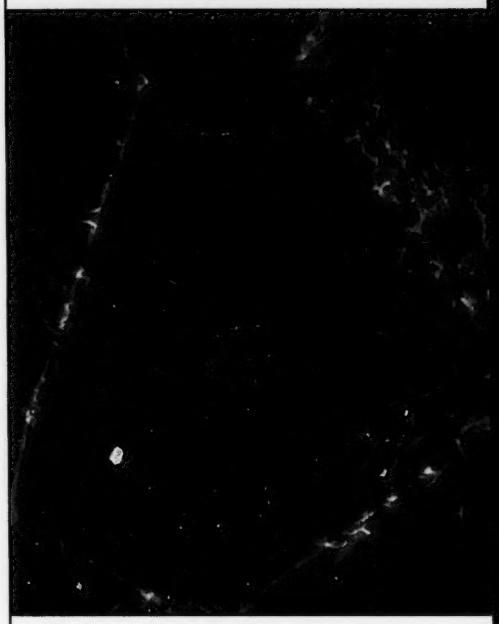

Ezrin (green) marks the apical microvilli of an epithelial cell. Garbett et al. show that the kinases Cdc2 and PKC regulate microvillar assembly by phosphorylating the ezrin-binding scaffold protein EBP50.
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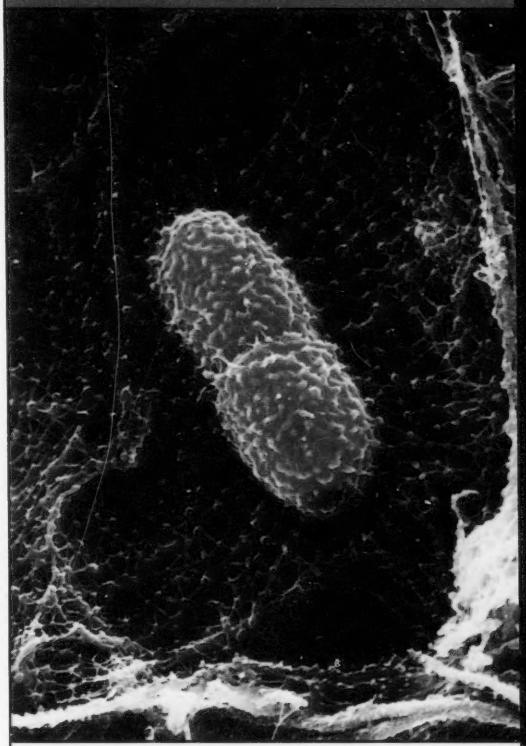

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A scanning electron micrograph of an infected mouse lung shows a *Klebsiella pneumoniae* bacterium (pink) snared in a neutrophil extracellular trap (green), a web of decondensed chromatin released by neutrophils to catch and kill pathogens. Papayannopoulos et al. reveal that neutrophil elastase degrades histones to promote chromatin decondensation and trap formation (image courtesy of Volker Brinkmann and Abdul Hakkim).

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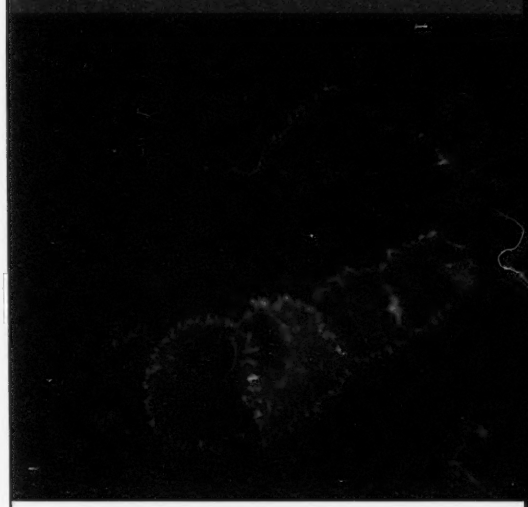

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The F-BAR protein SRGP-1 (green) localizes to epidermal cell junctions, and dramatically remodels them when overexpressed in a *C. elegans* embryo. Zaidel-Bar et al. reveal that SRGP-1 promotes the formation of intercellular adhesions by bending the plasma membrane outward.

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Quint le Duc, Quanming Shi, Iris Blonk, Arnoud Sonnenberg, Ning Wang, Deborah Leckband, and Johan de Rooij

The E3 SUMO ligase PIASy (green) localizes to the centromeres of mitotic chromosomes, where it conjugates SUMO molecules (blue) to DNA topoisomerase IIα (red). Ryu et al. demonstrate that this modification prevents topoisomerase IIα from untangling centromeric DNA before sister chromatids separate in anaphase.
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967 ERK1/2 MAP kinases promote cell cycle entry by rapid, kinase-independent disruption of retinoblastoma–lamin A complexes
Javier Rodríguez, Fernando Calvo, José M. González, Berta Casar, Vicente Andrés, and Piero Crespo

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Hartman et al. reveal that *Drosophila* Boi sequesters Hedgehog on the surface of ovarian apical cells to limit follicle stem cell proliferation. When wild-type Boi is replaced by a mutant version (green) that can't bind Hedgehog (red), the signaling molecule accumulates around follicle stem cells, causing them to overproliferate

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981 The RSC chromatin-remodeling complex influences mitotic exit and adaptation to the spindle assembly checkpoint by controlling the Cdc14 phosphatase
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1013 An invasive podosome-like structure promotes fusion pore formation during myoblast fusion
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1029 Protocadherin-19 and N-cadherin interact to control cell movements during anterior neurulation
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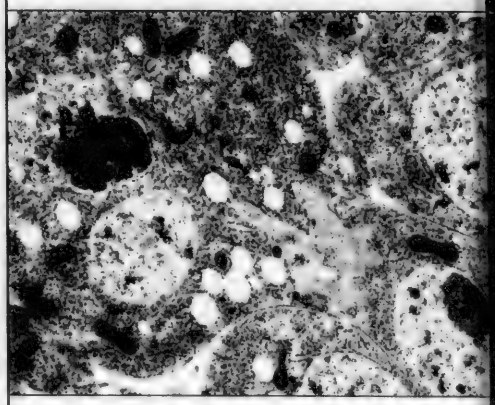

A fusion-competent myoblast (pink) projects actin-rich fingers into a multinucleate myotube to promote cell fusion and muscle differentiation in a *Drosophila* embryo.
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JCB
THE JOURNAL OF CELL BIOLOGY
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• Mad2 shifts a motor into idle
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1069 Mad2 inhibits the mitotic kinesin MKlp2
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1097 Phosphorylation of Lte1 by Cdk prevents polarized growth during mitotic arrest in *S. cerevisiae*
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1113 NADPH oxidase links endoplasmic reticulum stress, oxidative stress, and PKR activation to induce apoptosis
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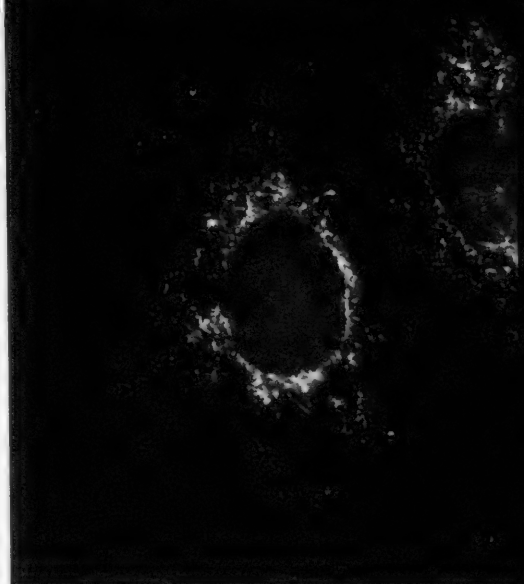
1141 Mff is an essential factor for mitochondrial recruitment of Drp1 during mitochondrial fission in mammalian cells
Hidenori Otera, Chunxin Wang, Megan M. Cleland, Kiyoko Setoguchi, Sadaki Yokota, Richard J. Youle, and Katsuyoshi Mihara

Articles with related stories in the IN THIS ISSUE section have page numbers in RED; articles related to the IN FOCUS feature have page numbers in BLUE.



On the cover

The dynamin-related GTPase Drp1 (green) localizes in foci where it cleaves the mitochondrial network (red). Otera et al. demonstrate that the protein Mff is required for Drp1 recruitment and mitochondrial fission in mammalian cells. Image © 2010 Hidenori Otera.

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1159 Formin follows function: a muscle-specific isoform of FHOD3 is regulated by CK2 phosphorylation and promotes myofibril maintenance
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1173 RNAi screen identifies a role for adaptor protein AP-3 in sorting to the regulated secretory pathway
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1189 PTP1B regulates Eph receptor function and trafficking
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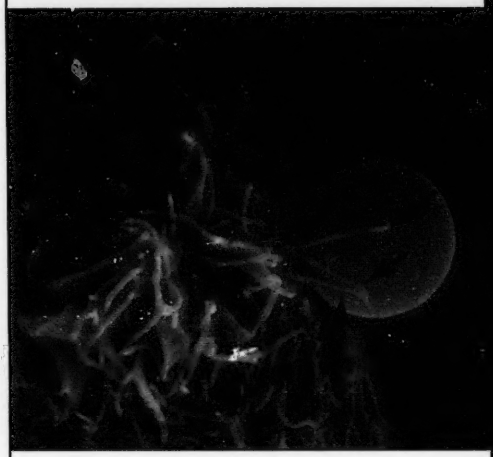
1205 Dynamic macrophage "probing" is required for the efficient capture of phagocytic targets
Ronald S. Flannagan, Rene E. Harrison, Christopher M. Yip, Khuloud Jaqaman, and Sergio Grinstein



Flannagan et al. reveal that macrophages send out actin-rich membrane protrusions (arrows) to capture target particles, such as this IgG-coated bead.
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1220 • Zfp521 works its zinc fingers to the bone
• Telomeres get SIRT-ified
• Myo1 provides a ring in the tail
B. Short

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1221 • PP6 puts the brakes on spindle assembly
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1229 The intracellular dynamic of protein palmitoylation
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1239 A computational model predicts *Xenopus* meiotic spindle organization
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1251 HURP permits MTOC sorting for robust meiotic spindle bipolarity, similar to extra centrosome clustering in cancer cells
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1261 Cdc42 localization and cell polarity depend on membrane traffic
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1271 Zfp521 controls bone mass by HDAC3-dependent attenuation of Runx2 activity
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1285 Chk1 inhibits replication factory activation but allows dormant origin firing in existing factories
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1299 SIRT1 contributes to telomere maintenance and augments global homologous recombination
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On the cover

Cells lacking the protein phosphatase PP6 have misshapen nuclei (blue) due to chromosome segregation errors arising from unchecked Aurora A kinase activity during spindle assembly.
Image © 2010 Kang Zeng.
See page 1315.

1315 Protein phosphatase 6 regulates mitotic spindle formation by controlling the T-loop phosphorylation state of Aurora A bound to its activator TPX2
Kang Zeng, Ricardo Nunes Bastos, Francis A. Barr, and Ulrike Gruneberg

1333 Biphasic targeting and cleavage furrow ingression directed by the tail of a myosin II
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1351 Nessun Dorma, a novel centralspindlin partner, is required for cytokinesis in *Drosophila* spermatocytes
Emilie Montembault, Wei Zhang, Marcin R. Przewloka, Vincent Archambault, Emeric W. Sevin, Ernest D. Laue, David M. Glover, and Pier Paolo D'Avino

1367 Proteasome and p97 mediate mitophagy and degradation of mitofusins induced by Parkin
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1381 Local clustering of transferrin receptors promotes clathrin-coated pit initiation
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1395 Targeted ablation of TRAF6 inhibits skeletal muscle wasting in mice
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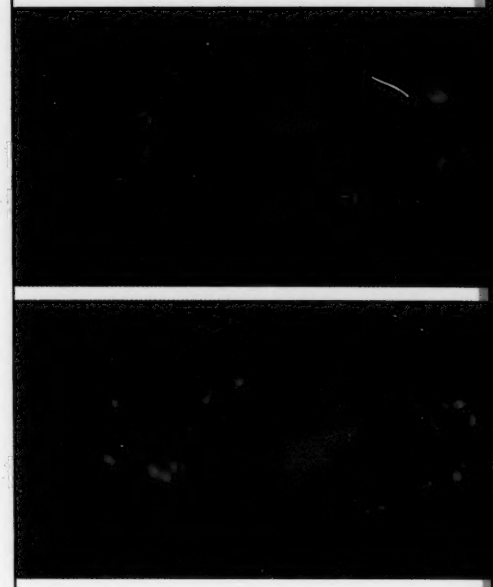
Corrections

1413 The centrosome neither persistently leads migration nor determines the site of axonogenesis in migrating neurons in vivo
Martin Distel, Jennifer C. Hocking, Katrin Volkmann, and Reinhard W. Köster



During meiosis, mouse oocytes lacking the microtubule-associated protein HURP (bottom) fail to cluster microtubule-organizing centers (green) into separate spindle poles on either side of the chromosomes (red).
See page 1251.